

Abstract of the Invention

A MEMS optical display system includes an illumination source for providing illumination light, a collimating lens for receiving the illumination light and forming from it collimated illumination light, and a microlens array having an array of lenslets and receiving the illumination light from the collimating lens. The converging microlens array directs the illumination light an array of pixel apertures in an aperture plate to a microelectrical mechanical reflector array positioned opposite the aperture plate. The microelectrical mechanical reflector array includes an array of microelectrical mechanical actuators that support reflectors in alignment with the array of pixel apertures. The array of microelectrical mechanical actuators orient the reflectors selectively to direct the illumination light back through the pixel apertures (to form part of a display image) or against the aperture plate (to be blocked). The illumination light passing back through the pixel apertures pass through the microlens array and a beamsplitter to a display screen.